



THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
of the
VILLAGE OF WATFORD
COUNTY OF LAMBTON

1966



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THE
ONTARIO WATER RESOURCES COMMISSION

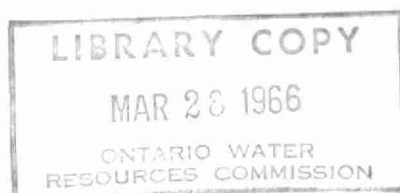
Report on a
WATER POLLUTION SURVEY

of the
VILLAGE OF WATFORD

in the
COUNTY OF LAMBTON

FEBRUARY - 1966

DIVISION OF SANITARY ENGINEERING



REPORT

ONTARIO WATER RESOURCES COMMISSION

GENERAL

A water pollution survey of the Village of Watford was conducted by the Commission on October 14, 1965. The survey included the locating and sampling of surface water drains and receiving streams (Watford Creek and Brown Creek). Industries with significant waste discharges were also visited. Mr. L. G. Barnes, Clerk-Treasurer, Village of Watford, was interviewed and accompanied a representative of the Commission during the investigations.

VILLAGE OF WATFORD

The 1965 Ontario Municipal Directory reported that the Village of Watford 1964 assessed population was 1,264.

Individual septic tank systems are employed for disposal of sanitary sewage. A large number of these units are known to be connected to the municipal storm drainage system. The municipal storm drainage system discharges mainly to the west into Watford Creek, a tributary of Bear Creek. Some drainage is also directed towards Brown Creek which flows east of the village. The various outfalls are designated by mileage points and are shown on an accompanying map.

A consulting engineering firm has been engaged by the municipality and a report was submitted outlining a proposed sewage collection and treatment system for the village.

INTERPRETATION OF ANALYSES

In order to appreciate the significance of the laboratory analyses of samples obtained during the survey, the Ontario Water Resources Commission objectives are given.

The 5-Day Biochemical Oxygen Demand (BOD) should not exceed 4 parts per million (ppm) in a stream or watercourse. A coliform count (Membrane Filter Method) in excess of 2,400 per 100 millilitres in a stream is regarded as indicative of pollution.

The objective for drain effluents is a BOD and suspended solids content not in excess of 15 ppm. The presence of detergents (ABS) is associated with sanitary sewage discharges.

Toxic wastes such as cyanide, chrome, etc., should not be discharged into watercourses.

INVESTIGATIONS

The following storm drain outfalls and stream locations were investigated:

SYNE 60.4 W. Front Street Drain

Wastes from the Imperial Foods (Watford) Ltd. were discharging into the drain. It was also believed that sanitary sewer connections had been made to the drain from approximately ten dwellings.

5-Day B.O.D. (ppm)	Solids Total Susp. Diss. (ppm)	Anionic Detergents (ppm) As ABS	M.F. Coliform Count per 100 ML
270	1010-144-866	1.0	29,000,000

These results indicate serious pollution.

SYNE 60.3.W. Huron Street Drain

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss. (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
102	620-134-486	11.0	340,000

Sanitary sewage was evident in the flow.

SYNEN 59.9.W. Gold Street Drain

The drain discharges into a small tributary of Watford Creek. The watercourse flows northwesterly for approximately two miles before joining Watford Creek in the Township of Warwick.

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss. (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
18	552-33-519	6.0	1,790,000

Sanitary sewage was evident.

SYNEN 60.0.W. Simcoe Street Outfall

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss. (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
59	624-98-526	10.0	25,000,000

There was evidence of sanitary sewage in the drain effluent.

SYNEN 60.1.W. Victoria Street Outfall

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss. (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
48	634-37-597	10.2	24,300,000

Sanitary sewage was being discharged from the drain.

SYNEN 60.12.W. Brown-Jarriott Drain

The open drain flows from the Township of Warwick and through the north section of the village and into a tributary of Watford Creek.

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss. (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
14	668 - 36 - 632	7.2	217,000

SYNE 59.7 Watford Creek at Concession IV, Township of
Warwick

Pollution of the stream was evident.

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
88	724 - 49 - 675	1.8	630,000

These results greatly exceed the OWRC objectives for a clean stream.

SYNE 58.7 Watford Creek, approximately 2 miles West of
Watford.

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss (ppm)</u>	<u>Anionic Detergents (ppm) as ABS</u>	<u>M.F. Coliform Count 100ml</u>	<u>Dissolved Oxygen (ppm)</u>	<u>Temp.</u>
9.6	758 - 45 - 713	1.5	6,000,000	4.5	8°C

Continued evidence of pollution was noted.

SYBR 75.5. Brown Creek at County Road, North East of
Watford

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss (ppm)</u>	<u>Anionic Detergents (ppm)As ABS</u>	<u>M.F. Coliform Count per 100 ML</u>
1.5	514-36-478	0.1	20,000

Brown Creek appeared to be in satisfactory condition
above Watford.

SYBR 72.8 Brown Creek at Concession Road, South East
of Watford

<u>5-Day B.O.D. (ppm)</u>	<u>Solids Total Susp. Diss (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>M.F. Coliform Count per 100 ML</u>
20	748-56-692	0.1	80,000

The high BOD is attributed to wastes from the Imperial
Foods (Watford) Ltd. At the time of the survey the newly constructed
waste treatment system for the plant was not in operation and an
undetermined volume of waste from the poultry killing operation
was being by-passed into Brown Creek.

INDUSTRIES

There are two industries with significant waste discharges
in the Village of Watford.

Imperial Foods (Watford) Limited

The plant is engaged in the killing and processing of
poultry.

Water supply is obtained from both the municipality and a
company well supply. The volume used during peak periods of operation

was estimated at approximately 180,000 g.p.d. This is approximately equivalent to the volume of waste being discharged. At the time of the investigations plant wastes were being discharged into the Front Street storm drain and into "Brown Creek". Analyses results of a sample of the waste being discharged in Brown Creek are shown below.

5-Day B.O.D. (ppm)	Solids Total Susp. Diss (ppm)
360	902-198-704

The construction of a new waste treatment system was almost completed and was expected to be in operation within a few days. The new works, include, screening facilities, aerator, and a 5-acre lagoon. There is provision for the construction of an additional lagoon.

A further visit was made to the plant on October 28, 1965 and the wastes were being discharged into the new system. Further routine inspections will be conducted by the Commission's Division of Industrial Wastes.

Androck Limited

The industry formerly known as the Andrews Wire Works of Canada Limited, is engaged in the manufacturing of wire household articles.

The volume of water used for rinsing purposes was about 45,000 gpd. This is approximately equivalent to the volume of waste water being discharged through a plant drain and into Brown Creek. Analysis results of a sample of the drain effluent are shown below:

SYBR 74.3 I Androck Ltd. Drain

<u>pH</u> <u>at</u> <u>Lab.</u>	<u>Chrome</u> <u>as Cr (ppm)</u>	<u>Cyanide</u> <u>as HCN (ppm)</u>
7.2	5.8	6.5

Toxic wastes were being discharged at the time of the survey.

Plant officials advised that the company is currently negotiating with the Commission's Division of Industrial Wastes in order to determine a suitable method of waste treatment.

REFUSE DISPOSAL SITE

The municipal refuse disposal site is located approximately one mile north of Watford on Concession IV Lot 19, Township of Warwick. The sanitary landfill method is employed. There are no watercourses in the vicinity of the disposal area and the pollution of surface waters is not anticipated.

SUMMARY

A water pollution survey of the Village of Watford on October 14, 1965, revealed that inadequately treated sanitary and industrial wastes were being discharged to Watford and Bear Creeks. This resulted in serious pollution of the watercourse.

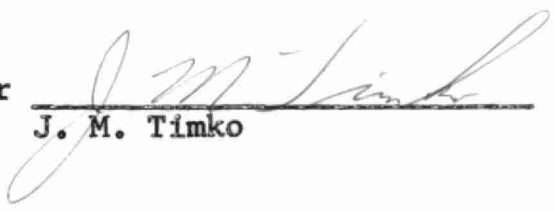
Immediate improvement is expected in the condition of the Trent Street drain and Watford Creek as a result of the new waste treatment system being placed in operation at the Imperial Foods (Watford) Ltd. Satisfactory treatment of toxic wastes should be provided by Androck Ltd. These two industries will be contacted further by the Ontario Water Resources Commission's Division of Industrial Wastes.

RECOMMENDATIONS

The Village of Watford should proceed with the construction of a municipal sewage collection and treatment system to provide adequate treatment for waste flows originating in the municipality.

All of which is respectfully submitted.

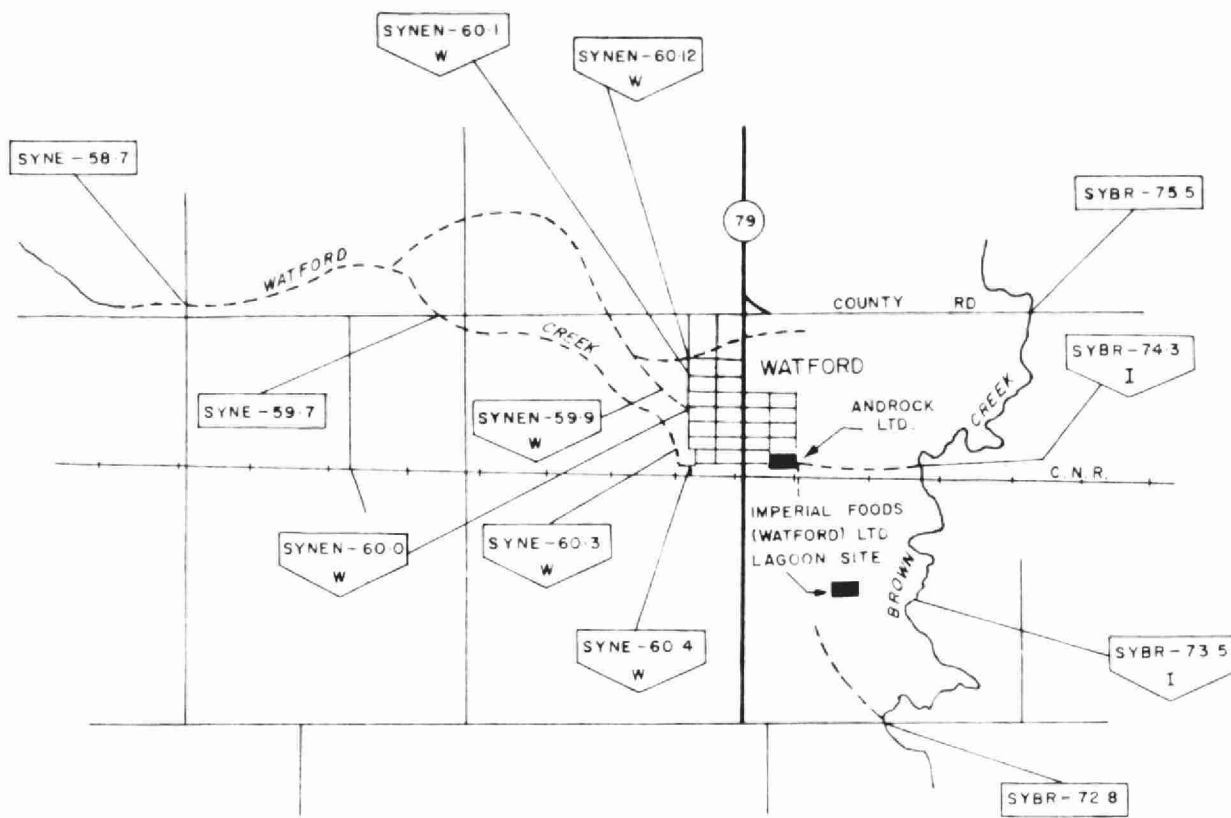
Acting District Engineer


J. M. Timko

Approved by

bh

J. R. Barr, Director,
Division of Sanitary Engineering.



LEGEND

SYBR-72.8 - SAMPLING POINT SHOWING STREAM AND MILEAGE

SYBR-74.3
I - OUTFALL SHOWING STREAM AND MILEAGE
- TYPE OF OUTFALL

I - INDUSTRIAL SEWER

W - STORM SEWER

ONTARIO WATER RESOURCES COMMISSION

VILLAGE OF WATFORD WATER POLLUTION SURVEY

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DATE: DEC, 1965

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